MARKED UP VERSION TO SHOW CHANGES MADE

IN THE CLAIMS

Claims 10 and 11 have been amended as follows:

10. (Amended) A method [for] of conducting a catalytic chemical reaction in a reactor, with at least one gas phase reactant, said method having the steps of flowing said at least one gas phase reactant past a catalyst material and reacting said at least one gas phase reactant to form at least one product; wherein the improvement comprises:

(a) providing said catalyst material as a porous structure having a porosity that permits molecular diffusion therein, said porous structure further having a length, a width and a thickness, said porous structure defining at least a portion of at least one wall of a microchannel defining a bulk flow path through which said at least one reactant passes;

(b) flowing said at least one gas phase reactant through said microchannel, past and in contact with said porous structure containing said catalyst material, a portion of said at least one gas phase reactant molecularly diffusing transversely into said porous structure and reacting therein wherefrom said at least one product molecularly diffuses transversely into said bulk flow, and [thereby] transporting said at least one product from [said] a reactor.

11. (Amended) The method as recited in claim 10, wherein said catalytic reaction is selected from the group consisting of steam reforming, CO_2 reforming, partial oxidation, chlorination, fluorination, hydrogenation, dehydrogenation, nitration, water gas shift, reverse water gas shift, autothermal reforming, combustion, hydrocracking and hydrodesulferization.

6